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ABSTRACT

Global communications systems and the types of relations that nations may develop through them in the future are explored in this paper. The various topics discussed include global change and communication; communication for global imaging and problem solving; information and communication as power; communication quality and transnational communication; cybernetic functions of communication; communication terms and concepts; management and communication phases, including traditional style, charismatic style, bureaucratic style, human relations style, systematic style, and network style; communications quantity; and communications quality. (FL)

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THE FUTURE OF GLOBAL COMMUNICATION: NETWORKS, CHOICES, AND A SHARED CULTURE

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GLOBAL CHANGE AND COMMUNICATION

As has often been vocalized throughout history, change is the natural order of things. The Zeitgeist occasionally moves towards denying the presence of change as normal, but recently change is seen as an accelerating, everpresent dimension of reality. Alvin Toffler (1970) popularized the strain placed on individual and societal structure due to accelerated change. Donald Darnell (1971: 5-16), in a rebuttal to one who assumes stasis as normal, reminds us that change is one of the few constants. Stasis is the unusual, so we should, at best, hope to shift this constant flow of change in desired directions. We cannot always instigate change, but we can sometimes help direct it.

Why then, place special attention on change itself? As Toffler decries, the change is accelerating beyond our normal ability to cope optimally. In the early 1970s, the Club of Rome projected changes that spelled out collapse for the system Earth (Meadows, 1972; Forrester, 1971). In referring specifically to international relations, but also to change in general, Eugene Skolnikoff (1972: 353-369) claims, with less alarm, that we are not headed for disaster, but Earth and its social organisms are headed for moderate but definite and important changes.

These problems have been estimated through various means, but at one level these conceptions of change can all be viewed as information organized into configurations that have correspondences to the external world. These configurations of information are then projected into the future. The collection, storage, transformation and reorganization, transmission, and reception of these configurations of information involves data, machines, and people. Communication of information is

therefore one way, but a most important one, of coping with the diverse processes involved in projecting changes and also in attempts to induce desired direction in change.

As the boundries of human actions and interactions expand, the home planet becomes relatively smaller. Problems, ranging from the individual to the societial level of nations, thus expand comparatively and more easily press for global attention (Ward, 1966). As human interaction consequently increases, thereby increasing the potential for stress, the importance of communication increases.

People cannot not communicate. This was most formally proposed by Watzlawick, Beavin, and Jackson (1967: 48-51), who also noted that ill health in the communicator produces unhealthy communicative processes. From the therapeutic situations described by Carl Rogers (1959: 230-238) to the mathematical models of communication by Shannon and Weaver (1949), the communicative process itself is described as affecting the state of both the communicator and the "communicatee." The study of the communicative process is therefore crucial to the understanding and eventual improvement of transnational relations.

The social system Earth appears to be headed for an immense amount of change in global communication. Increased communication has the potential for facilitating the solving of global problems; for transmitting images of a shared global culture; for bringing people close together so that they may perhaps live in greater harmony and happiness, or so that they may live with reduced freedoms and choices. Conceptual models constructed by communication and global theorists indicate that we may be headed for a world in which global transactions are facilitated by communication systems and networks. The development of communications

technology not only provides physical evidence of this direction, but also influences that development. Management styles in organizations appear to parallel, in some respects, developments in communication and in the capabilities of communications technology. An overview of the salient qualities of communication for global development, and an integrative comparison of management styles and communication developments indicates that we, as a global community, have a greatly expanded potential for developing a shared and possibly more peaceful global culture. Paradoxically, at the same time we risk the potential of reduced freedoms and choices.

Some of the more conventional and obvious functions of communication will be overlooked here in favor of noting some of the less usually conceptualized, but extremely important functions. The functions that global communication plays in the global system are complex, synergistic dimensions of a global level of study that is in the earlier stages of development. For an excellent and concise survey on conventionally conceptualized functions and structure of global communication, see Sommerlad's UNESCO report, National Communication Systems (1975). The report covers such functions as information, education, and political mobilization; and such structural dimensions as the mass media, inter-personal, new agencies, and libraries.

COMMUNICATION FOR GLOBAL IMAGING AND PROBLEM SOLVING

The optimal communication of information, whether that information is emotions, values, concepts, facts, or data, becomes a major problem due to shrinking boundries and advancing technology. In a sense, it is a problem of concept formation: how to visualize the complex and diverse dimensions of communication on this planet.

Karl Deutsch (1953: 67) claims that all activities of societies are essentially ones of producing, selecting and channeling information; "Communication engineering transfers information....a patterned relationship between events." In discussing television images, he notes: "What is transmitted here is neither light rays nor shadows, but information, the patterns of relationships between them." Any problem-solving or concept formation activity on a global scale relies, then, on the ability to generate and retrieve information patterns in a way useful and flexible to the user.

Essentially, a schemata of theoretical considerations needs to be outlined for a global communications network. Attempts at such a cognitive construct are also essentially attempts at formulating future alternatives. The development of an elaborate, "rational" image can be viewed as an essential part of the concept formation necessary to direct change to approximations of desired states. Imaging is extremely beneficial and has long been known to be essential in some concept learning modes (Hall, 1959; Maier, 1931), for creativity (Walkup, 1965), and for some stages of problem solving (McKeller, 1957). The issue of problem formulation and concept learning is characterized under different terms by Elise Boulding (1961: 431-444), but imaging is also described as a means of coping with the future. Fairfield (1976: 207-217) specifies methods of imaging in education and for the future and claims we need "exponentially expanded imagery."

Margaret Mead (1961: 444-457) also analyzes images of the future, but as a means for developing a shared culture. If building a future can be viewed as a means for generating a shared culture, then the communication of images that have potential global appeal takes on even

greater importance. The collection of information; storage; transformation and reorganization of that information into universally accepted images; transmission; and reception of those images then becomes most important in the development of a shared global culture. As change agents, the ability of global communication networks to facilitate image production and to transmit images is crucial, because scientific, technical, political, cultural, and several other forms of information run into many complex obstacles. Images, although encountering numerous difficulties themselves, are one way of avoiding certain obstacles. Kenneth Boulding (1956: 3-18) notes that they may, for instance, provide a great deal of information in a highly condensed and resilient form that can sometimes bypass many "facts" and values that appear contradictory.

INFORMATION AND COMMUNICATION AS POWER

The functioning of global communication networks is important not only for the transmission of images, but also because communication is a source of power. The proper quantity and quality of power is needed for the proper and optimum functioning of any system. Sometimes this power must be in the form of electrical energy, but many times it is in the form of social, economic, or political power. Information is a form of power. Its proper use is essential for the development of any movement, social or physical. Movement requires an amount of power that is channeled in the proper form at the correct time. Information is necessary for any power base, regardless of whether it is used by the "workers of the oppressed" or to exploit a continent.

All behavior requires information. For instance, one of the most technologically advanced communications systems developed on this planet

has led to the creation of the Alaskan pipeline. The communications satellites, Landsat I and II, were responsible for generating information that was quickly transformed and codified for use by geologists. Once conveyed and used, the information was transferred into knowledge which indicated oil off the shore of Alaska.

The importance of the pipeline is unclear, but the significance of such a powerful technological information system is evident. In fact, the multispectral imagery from Landsat satellites I and II has already produced United Nation Conferences on information network arrangements. In response to transnational conflict arising from satellite generated data, these conferences are already attempting to establish guidelines for the transmission of such data.

Ronald Stowe (1977), Assistant Legal Advisor for the U.S. Department of State, highlighted the potential impact of information when commenting on a recent attempt by a nation's attempt to withhold Landsat generated information that was processed by their ground station. In violation of Landsat contracts, this action created a real but "quiet" transnational incident. As the demand for natural resource information increases, such global information and communication networks will become increasingly important in international relations.

In a different sense, Wilbur Schramm (1963: 30-57) has outlined power as a process that leads to more control. Control, in turn, leads to increased interactions which implies increased communication. The development of power cannot be separated from the development of communication. Conversely, Schramm also implies that the development of communication can determine the development of power and can be both a creator and an index of international status.

COMMUNICATION QUALITY AND TRANSNATIONAL COMMUNICATION

Communication, to be effective and powerful, does not simply rely on quantity to achieve desireable outcomes. John Burton (1969: 55) conducted extensive research in the reduction of conflict between nations. From these efforts, he demonstrates that just communication alone is not enough to reduce tension or solve problems: "communication is effective only when there is a check on and flexibility in processes of perception and of consideration of responses." If communication is properly controlled, especially if to help reorganize existing negative perceptions of adversaries, it can very importantly increase learning and reduce conflict.

Young (1968: 116-145) claims that communication between protagonists is essential in transnational situations of extreme stress: otherwise the actors quickly resort to physical action:

> As a crisis becomes more intense, "effective" communication among the protagonists concerning such matters as attitudes, expectations, intentions, and resolve will be based increasingly on physical actions in contrast to verbalized statements through diplomatic channels. [1968: 116]

A classic example of this is the 1978 offer of Egyptian leader Anwar Sadat to meet with Israelei leaders anywhere in the world. This move communicated a radically different image of his leadership than previously held by the Israelei people. Quantitatively, the amount of messages transmitted between Sadat and Begin were relatively low compared to the history of negotiations between them, but the qualitative nature of the messages was more important.

Communication quality as an integrative process.

Young (1968) also describes crucial situations in information processing, such as feedback and overload crises. While Young deals

more with specific problems in communication during crisis situations, Wilbur Schramm (1963) developed the idea that specific types of communication are crucial to developing more democratic systems. If one accepts the ideal of democratic system as desireable, then the type of communication employed in such a system is extremely important. Simple institution of more communication channels is not enough to encourage free, democratic states:

> Whether communication development per se contributes to wider and more democratic control of national government - we must say, as before, not necessarily. It is possible, apparently, to use a more efficient communication system more effectively for tight controls over political action. [1963: 55]

Expanding this to a global level, it is readily apparent that an efficient global communication network has the potential to be an extremely unifying factor in political development. Conversely, intense transnational communication has the potential to restrict free and democratic decision-making, and to restrict the behavior of nation states in their internal and global affairs. Due to "shrinking limits" and expanded means of global communication, both of these may very well be the major trends of the future. Eugene Skolnikoff (1972) outlines this trend in some detail, essentially stating that technological communication and transnational industries have created interdependencies spanning internal and transnational boundries. Advanced technology has created conditions which blur domestic and foreign affairs. For instance, nitrogen fertilizers and other major sources of flourocarbon emissions within the boundaries of nations may very well be regulated by transnational organizations in an effort to stop the planet's ozone layer from being depleted.

In a less direct manner, technological monopolies may eventually be

able to determine behavior and decision-making in nation states. A UNESCO report on satellite communication (Ploman, 1972: 22-28) supplements Skolnikoff's claims by noting that satellite-generated information will become increasingly important to nations. However, the control of those satellites has potential for inordinate amounts of influence by small groups through the manipulation of technical interface standards and cost schedules. Skolnikoff rather starkly summarizes the potential significance of global communication as:

> Dependence resulting from such monopolies may be more subtle and difficult to overcome than past patterns of direct domination through economic or military power have been....In the long run the development of low-cost communications may be the most significant cause of interdependence as it would encourage extensive international data transmission and the growth of electronic technologies for the handling and use of large amounts of data. [1972: 356]

So communication may either help bring people closer together to live in greater harmony and happiness, or it may help create a global prison, in which there is little freedom, constant monitoring, and "no escape." In sum, Deutsch points out that government is

> somewhat less a problem of power and somewhat more as a problem of steering; and it [Nerves of Government] tries to show that steering is decisively a matter of communication. [1969: xxvii]

CYBERNETIC FUNCTIONS OF COMMUNICATION

In "steering," global communication acts as a feedback process and thus, allows the human species to determine where it is and where it is headed. Ever since Wiener's (1948) cybernetic model of communication as a self-regulating, self-informing process, attention has increased to the steering functions of communication itself. Deutsch (1953, 1969) has developed one of the more comprehensive models of the cybernetic functions

of communication in national and international relations. Deutsch (1969: 145-154) points out, though, that information potency is dependent on the stability of a system. Unstable or poorly integrated systems are more susceptable to information and are more likely to reorganize with new impact. The potency of information also depends upon not only the characteristics of the information, but upon the selectivity and sensitization of the recieving system.

Earlier, Kenneth Boulding (1956) has most noteably described similar characteristics of information with regard to image potency. So regardless of the scale or applications of information, the characteristics of actors sending or receiving information are an additional and extremely important set of factors which determine the qualitative and quantitative behavioral effects of information and communication.

The potential impact of information as a cybernetic steering process may be illustrated by the Club of Rome's Limits to Growth model (Meadows, 1972; Forrester, 1971). The LIMITS model analyzed five major world systems: population, food supply, industrial production, pollution, and natural resources. By assigning studied values to each system, the model projected collapse of the world system in the early 2000s.

Several of the systems will reach levels that are unable to support human civilization as we know it today. The model describes "feedback loops" in which the various systems are decreased or increased as a result of internal changes and changes in other systems. For instance, an ample food supply helps increase population. In addition, population increases alone exponentially amplify further increases population, up to a point.

The LIMITS model itself creates a feedback loop which increases the

amount of information codified in useful ways. The report has stimulated a great deal of research in global limits of many types; including such approaches as the report by the Reshaping the International Order Project (Tinberg, 1976), which forms a more optimistic view. Our ability to collect, organize, and codify information about global limits into such models as these acts as a cybernetic mechanism, and to some small degree at least, will help us to steer away from the more unpleasant alternatives for the future.

Communication quantity.

The disturbing fact about the technological potential for global integration is that it is occuring so rapidly; perhaps as Toffler (1970) suggests, too rapidly for people to adequately cope with. If the "global community" does not directly attempt to cope with the development of information and communication systems, it will result in serious detrimental consequences. Toffler describes several symptoms of such inadequate coping under the rubric of "future shock," but does not generalize to the level of global functioning. However, many of the deleterious conditions that individuals and societies exhibit when future shocked can be generalized to a global scale.

The detrimental aspects of future shock with regard to the quantity of global communications are further compounded by the importance, or quality, of such communications. However, the sheer amount of change projected in communications technology is enough to stagger present modes of communication and information processing. Further exploration of the quantity of communication merges into projected trends and will be dealt with following some clarifications in terminology. Up to this point, it has been adequate to talk about communication in general. In

discussing some historical and future trends, however, finer distinctions in the use of "communication" will be necessary.

COMMUNICATION TERMS AND CONCEPTS

Act.

Three major perspectives on communication can be represented by three terms: act, interact, and transact. The act perspective is represented by a concern with the sender. Messages are sent according to logical and internal consistency, as judged by the sender. Due to the inherent and relatively static state of the message, it is received essentially the same as it was sent, as long as there is no noise or obstacle in the system. This view was most formally and elaborately formulated by Shannon and Weaver (1949) in a mathematical treatise on communication.

Interact.

Fisher and Hawes (1971: 444-453) developed a natural extension of the act concept, known as the Interact System Model. In this paradigm, attention is not only given to the characteristics of the sender and the message itself, but to characteristics in the receiver itself. Communication messages are patterns in an ongoing, two-way relationship. Attention is best given, then, to conditions in both sender and receiver.

The determination of who is sender and who is receiver is arbitrary, for any communicative interface is a process determined by previous and expected conditions. All acts are merely isolated segments in an ongoing interaction. They therefore are not usefully analyzed outside of the context in which they occur. An interaction analysis is more complex and requires more of a systems analysis. Implicit in the interaction model is an emphasis on the transfer of messages for their effectiveness.

Efficiency is equated with the ability to transmit messages with a maximum of meaning, and to tailor the messages so that their effect is optimal.

Transact.

Martin Buber (1970) extended the concept of interaction to what has commonly become known as transaction. Transaction is more person-oriented, in that it presupposes that each person is as important as the message being sent. Thus, the clear transmission of meaning is communication, but conditions within each person equally determine what is communicated. In addition, a concern for the welfare of the other takes precedence over a concern for the effectiveness of the message. A communicative experience is a sharing of information in order for both actors to benefit, not necessarily one in which a certain message has been "effective," or "wins." In such a situation, participants are continually changing, growing, or learning according to the physical psychological, and sociological environment.

Choice Attribution.

Donald Darnell (1976: 53) further extends the notion of transaction to imply that one of the major functions, in fact, one of the major definitions of communication, is "the process of making choices...and attributing choices...." Communication is a sharing of information in the form of emotions, values, data, or concepts to expand participants' awareness of the reference points of others. Once these reference points, or backgrounds, are known, it becomes easier to determine from where a participant has evolved; the reasons for sending certain messages; and which of a number of alternatives is the best choice for creating future conditions.

Assuming this position, communication becomes an interminable process,

without beginning or end, for enlarging and defining the alternatives and choices of participants. It is not characterized by cause-effect and linear relationships. Extending this model of communication and choice, communication becomes a major process by which alternatives for the global future are defined and achieved.

Communication and Communications.

Michael Prosser (1973:14) characterizes communication with an emphasis on process and as a social interaction. On the other hand, communications emphasizes the networks and channels by which communication is transmitted. Although the denotative boundries between the two blend, it is useful to recognize the two values, if at least only on a continuum.

Intercultural and transnational communication.

Gerhard Maletzke (1970:478) draws a distinction between intercultural communication and transnational communication. Intercultural communication occurs between cultures, but does not necessarily imply that national boundries are involved. Transnational communication entails communication between the political entities of national status.

Global communication.

Finally, global communication should be construed as referring to communication which typically crosses over both cultural or national boundries. However, all modes of communication cross such boundries to some degree. For instance, personal contact is the most universal form of communication, but does not necessarily cross either political or cultural boundries. Global communication does not have an explicit and commonly accepted definition, but appears to refer to communicative processes that normally cross such boundries. To formalize the way the term is used here, global communication will not normally connotate such

modes as personal contact, but the possibility exists. The crucial element in the way the term is used here is that the referent be in the normal employ of crossing national or cultural boundaries. Global communications should then refer to global communication in the same sense that Prosser's (1973: 14) communication relates to communications.

MANAGEMENT AND COMMUNICATION PHASES

Anthony Judge (1972a: 18-24) defines several basic conceptual research and management models, ranging from traditional to network styles. In these models, Judge is not specifically describing communications research, but refers to organizational research and management styles in general. They are, however, applicable to the evolution of communication research and paradigms. Like act, interact, and transact perspectives, the models that Judge describes also document general paradigms, or perhaps even "mini-Zeitgeists" of the communication discipline. The models used by Judge are not completely comprehensive, nor are the categories necessarily mutually exclusive. The models are however, useful for conceptualizing methods and stages in both communication and global management, and also help to project the nature of future global communication and relations.

Traditional style.

Anthony Judge's (1972a: 21) organizational styles are a concise way of overviewing the evolution of management and communication styles; from the level of small groups to organizations of global scope. The Traditional style focuses on maintaining traditions and is organized around procedures and structures set by historical tradition. Task orientation is centered around the needs of established authority, and justification for action is based upon maintenance of the status quo.

Relationships and communications are structured, hierarchial, rigid, and act oriented.

Charismatic style.

The Charismatic or Intuitive style focuses on individual personal attraction. Intuition or spontaneous creations are used for decision-making. The maintenance of the position of leaders is important and occasionally this function blends with the maintenance of historical or status quo conditions. Task orientations center around the needs of the individuals in leadership positions. Often, for these leaders to maintain their charismatic base, they must cater to specific and changing needs of those in their base of power. Relationships tend to be both interact and transact centered, but predominately interact oriented. Any leader or management style based upon charisma must continually be aware of sentiments and conditions in the organization, or "power base," but must retain a level or power over others.

Bureaucratic style.

The Bureaucratic or Classical style centers on task efficiency. It entails a more mechanistic structure, designed to handle problems in a uniform and rationally structured manner. Leadership is aggressive and characterized by "organizing." Interactions are governed by procedure and hierarchy of importance. Communication is more act oriented, but some interactive processing is required. To what degree act and interact centered perspectives are adopted by an organization is unclear. However, it is possible that organizations are considerably more interact oriented than Judge's description suggests.

Human Relations style.

The Human Relations or Group style focuses not only on task functions,

but also very importantly on the maintenance of social relations for achieving those tasks. Maximization of personal satisfaction is attempted. Group goals and the articulation of personal feelings and ideas is encouraged. Ad hoc and unstructured, personal contacts characterize the organizational structure. As much as possible in an organization, interaction and communication is transactionally centered, with an increased emphasis on the goals and growth of individuals effected by, and in, the organization.

Systematic style.

Systems research has recently characterized many disciplines, including global research. This perspective has also been used as a paradigm for management styles and decision-making on global scales. Judge describes the systemic style as centered around flows of information and materials (and conceiveably, humans). The system attempts to maximize survival and growth, but adapts fluidly to changing conditions. Rational management and decision-making is ephasized, and authority, hierarchies, and historical values are minimized. Systemic organizations are guided and defined by decentralized, executant units. Expert, or technological (but not necessarily mechanical), approaches are emphasized in a team, or democratic, approach.

Interactions with complementary or competing participants are dictated by cost effectiveness and directed by strategic skills. Analyses are conducted on the basis of more overall, overarching processes, rather than discrete events and short term day-to-day considerations. Communication and interactions are interaction oriented: changes in one system produce changes in many others. Systemic approaches are less

concerned with individual participants' welfare, so they are not transactionally oriented. The heavy emphasis on interaction of systems carries over to the systemic style of management, and best characterizes it.

Network style.

Judge (1972a: 20) draws a convincing case for claiming that global communications and thus, global management, is evolving to a network style. The network style centers less around growth and survival with other unitary systems, and more as adapting and changing to emerging conditions. Unlike any of the other systems, it is composed of "dynamic and evolving networks of personal and organizational units, living systems or organizational"

Network objectives consist of maintaining optimal conditions, a balance in effect, to create a personally "fulfilling environment." Leadership and decision-making depend upon goal construction and clarification, and upon both the physical and psycho-socio-environment of individuals, groups, organizations, and systems. Structures are fluid, ad hoc, and determined by goals regardless of whether those goals are person-oriented or task-oriented. Interactions and communications are characterized by the "interdependent, dynamic emergence of cross-linking authority centers of short duration." In essence, relationships are fluid and change according to learning and the ongoing task. Rigid or formal structures are considered as "academic" and do not interfere with the flow of work and information between participants. Centralized leadership, decision-making, and communications are replaced by more decentralized, autonomous participants capable of relatively high amounts of freedom of choice. In short, network is a very transactive style,

but without excessive emphasis on human relations.

COMMUNICATIONS QUANTITY

The success of a network is dependent on the ability to generate and codify large masses of raw and initially undifferentiated information, for intercultural, transnational, and global communications systems. Liklider (1966) noted that the massive amount of scientific and technical information being produced throughout the world is creating situations of information overload in which much valuable information is essentially "buried." In turn, Summit (1977) describes the current status of information in a usable form to global-wide users as rapidly increasing. Chacko (1977: i) has outlined a means for developing the actual technology and conceptual problems involved in national and international information systems that could easily be developed into a global system or network. He categorizes uses of scientific and technical information and projects costs of paper-based communications. Possible criteria are developed for evaluating uses, "including inter-disciplinary communications via the electronic alternative." In 1974, he estimates the cost of scientific and technical information communication in the United States alone as $8.5 billion.

In a more specific way, Summit (1977: 5-6) outlined the history of computer aided information access to the point where today over "50 million abstracts and/or citations from some 50,000 journals and other sources" are available. At least "90-95% of current significant scientific and technical journal and report literature is accessible via online computer terminal."

Georges Anderla (1963: 61), in a report for the Organization for Economic Co-operation and Development, documents the present use of many

types of information collection, storage, and transfer. In the report, he concludes that all forms of scientific and technical communications have increased exponentially over the last 15 years; and will continue to do so at the level of a fourfold to a sixfold increase in the next 15 years. He also claims that most estimates appear to be too low.

> Most estimates in current circulation, adopted without critical study even in the official documents of a number of international organizations, need to be revised upward....In some cases, most earlier evaluations needed to be multiplied by two, three or even four. [1963:31]

COMMUNICATIONS QUALITY

Intercultural, transnational, and global communications, at the very least, appear to be increasing at an explosive rate. An analysis of the qualities of new and growing communications indicates that such communications appear to be increasing in potential for becoming transactionally oriented. Judge's six organizational styles appear to follow a cyclic pattern of alternating emphasis on act, interact, and transact.

Table 1 about here.

The organizational styles and corresponding communicative paradigms are summarized in Table 1. The traditional style has been very act oriented, and little concerned with persons as persons in their own right. The bureaucratic style is more interact centered. Systemic style is very much interactive. On the other side, Charismatic is interact and transactionally oriented, with Human Relations as very transactional. Judge's figure, which represents the emphasis on organization, efficiency,

personal concern, centralization, and problem orientation to management styles, is shown in Figure 1. In addition, act, interact, and transact communication perspectives are presented in italics. Table 1 and Figure 1 clearly project that evolving global communication is mainly transact oriented.

Figure 1 about here.

A number of reports and projections indicate that developing communications systems will be more oriented towards flexible and individually tailored needs, with access to national and global information. Some of the recent work being done is primarily on computerized information delivery systems (Turoff, 1977; Garfield, 1976; Summit, 1977), but an important amount of larger scale work is being conducted with a more integrated approach to communication systems (Anderla, 1973; Mogensen, 1976; Sommerlad, 1975; Chacko, 1977; Dial, 1968; Webster, 1975; Judge, 1970; 1971a, 1971b, 1972a, 1972b, 1972c). Some of this work is on micro and mini computers, which encourages the development of distributed processing (networks).

Satellite communications may eventually allow inexpensive, point to point communication in any one of many interactive modes, such as a computerized information literature search, computerized message conferences, video phones, news delivery, and problem-solving by individual or large scale private, nongovernmental, governmental, and corporate organizations (Pioman, 1972; UNESCO, 1968; Dickson, 1973).

All of this work emphasizes multichannel and multidisciplinary approaches to problem-solving and communication. Individual needs to

interact with large masses of national, international, and global information are continually stressed. Perhaps the epitome of the communications network is voiced by Judge (1971a) when he proposes that ad hoc organizations will replace more formal and permanent structures. In lieu of centralized facilities, advanced communications networks will allow people to communicate globally without having to physically locate themselves in a specific location. This general trend is transactive, and thus encourages the development of an increased number of shared alternatives.

SUMMARY

The flexible, comprehensive, and interactive nature of future global communications appears as though it will allow the interactive sharing of information for global problem solving. The impact of such communication may very well drastically change current projections in many global systems, such as pollution. Due to the flexibility of such global networks, they may also allow for the mutual development and sharing of images. This could lead to an increased awareness of a common global culture. The potential exists, however, that this expansion of individual, cultural, and national interactive power could also reduce choice making and the ability of people to evolve a shared culture. Such people as Deutch, Derek, Schramm, Skolnikoff, and Young have begun the process of analyzing the potential of communication for also reducing shared choices.

As communications develop into a multibillion dollar global enterprise, drawing all peoples together, Deutch points out that their own developed psychological, sociological, and cultural characteristics will determine the direction of those interactions. Athough it appears as though an interactive network will develop which has the potential to draw people

closer together in sharing, learning, and growing, the potential exists for the Zietgeist to develop into a state where an immense information access interferes with the free development of individuals, cultures, and nations.

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Table 1

STYLE	TRADITIONAL	CHARASMATIC	CLASSICAL	HUMAN RELATIONS	SYSTEMIC	NETWORK
COMMUNICATION PARADIGM	ACT	INTERACT TRANSACT	ACT INTERACT	TRANSACT	INTERACT	TRANSACT

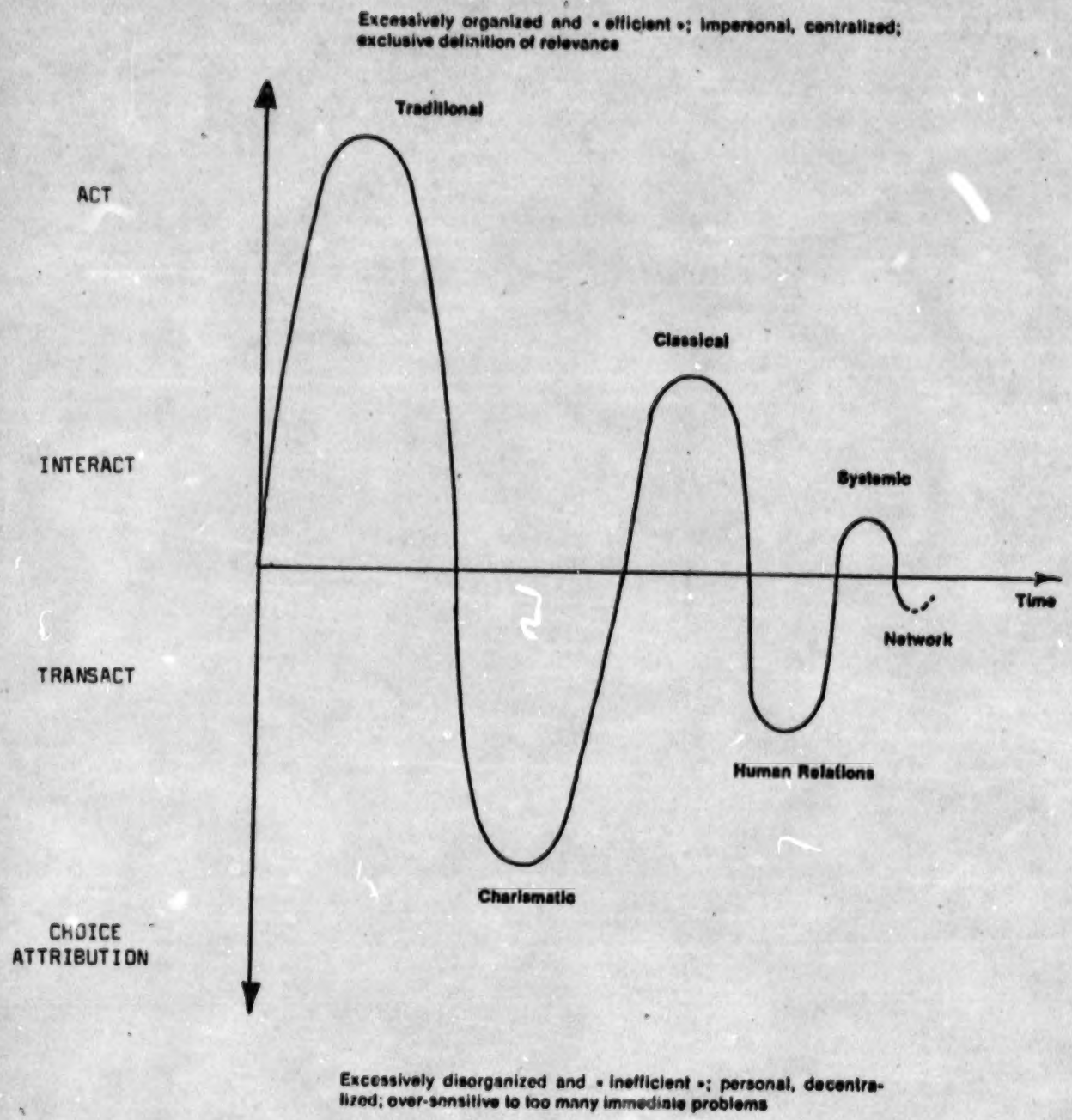

Figure 1. Anthony Judge's "indication of the succession of management style extremes and the convergence over time on a more balanced form." (1972: 22) In addition, act, interact, and transact communication perspectives are shown in italics.